Material Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Gas, Refinery Fuel

COMPANY IDENTIFICATION

Chevron Products Company
Marketing, MSDS Coordinator
6001 Bollinger Canyon Road
San Ramon, CA 94583

EMERGENCY TELEPHONE NUMBERS

HEALTH (24 hr): (800)231-0623 or
(510)231-0623 (International)
TRANSPORTATION (24 hr): CHEMTREC
(800)424-9300 or (703)527-3887
Emergency Information Centers
are located in U.S.A.
Int'l collect calls accepted

PRODUCT INFORMATION: (800)689-3998 MSDS Requests and Product Information

SPECIAL NOTES: Fuel Gas Streams defined on TSCA inventory overlap in composition.

2. COMPOSITION/INFORMATION ON INGREDIENTS

100.0 % Gas, Refinery Fuel

CONTAINING

COMPONENTS	AMOUNT	LIMIT/QTY	AGENCY/TYPE
GASES, REFINERY FUEL Chemical Name: FUEL GASES, REFINERY CAS68308270	100.00%	NONE	NA
MAY CONTAIN			
METHANE Chemical Name: METHANE CAS74828		Asphyxiant	ACGIH TWA

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ETHANE		
Chemical Name: ETHANE		
CAS74840	Asphyxiant	ACGIH TWA
HYDROGEN		
Chemical Name: HYDROGEN		
CAS1333740	Asphyxiant	ACGIH TWA
N-BUTANE		
Chemical Name: N-BUTANE		
CAS106978	800 ppm	ACGIH TWA
1-PENTENE		
Chemical Name: 1-PENTENE		
CAS25377724	NONE	NA
BUTENE		
Chemical Name: BUTENE		
CAS25167673	NONE	NA
ETHYLENE		
Chemical Name: ETHENE		
CAS74851	Asphyxiant	ACGIH TWA
PROPANE		
Chemical Name: PROPANE		
CAS74986	2500 ppm	ACGIH TWA
	1800 mg/m3	OSHA PEL
PROPYLENE		
Chemical Name: 1-PROPENE		
CAS115071	Asphyxiant	ACGIH TWA
HYDROGEN SULFIDE		
Chemical Name: HYDROGEN SULFIDE		
CAS7783064	10 ppm	ACGIH TWA
	15 ppm	ACGIH STEL
	Table Z-2	OSHA PEL
	Table Z-2	OSHA CEILING
	100 LBS	CERCLA 302.4 RQ
	500 LBS	SARA 302 TPQ
	100 LBS	SARA 304 RQ

COMPOSITION COMMENT:
All the components of this material are on the Toxic Substances Control Act Chemical Substances Inventory.

3. HAZARDS IDENTIFICATION

********** EMERGENCY OVERVIEW **********

Colorless gas.

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- **FLAMMABLE GAS. MAY CAUSE FLASH FIRE**
- **CONTAINS HIGHLY TOXIC AND FLAMMABLE HYDROGEN SULFIDE GAS (H2S)**
- **DO NOT ATTEMPT RESCUE WITHOUT SUPPLIED-AIR RESPIRATORY PROTECTION**
- **REDUCES OXYGEN AVAILABLE FOR BREATHING**
- **CONTENTS UNDER PRESSURE**

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IMMEDIATE HEALTH EFFECTS

EYE:

Not expected to cause prolonged or significant eye irritation.

SKIN:

Contact with the skin is not expected to cause prolonged or significant irritation.

INGESTION:

Material is a gas and cannot usually be swallowed.

INHALATION:

This material can act as a simple asphyxiant by displacement of air.

Hydrogen sulfide has a strong rotten-egg odor. However, with continued exposure and at high levels, H2S may deaden a person's sense of smell. If the rotten egg odor is no longer noticeable, it may not necessarily mean that exposure has stopped. At low levels, hydrogen sulfide causes irritation of the eyes, nose and throat. Moderate levels can cause headache, dizziness, nausea and vomiting, as well as coughing and difficulty breathing. Higher levels can cause shock, convulsions, coma and death. After a serious exposure, symptoms usually begin immediately.

In 1994, the U.S. National Institute for Occupational Safety and Health (NIOSH) published the Immediately Dangerous to Life and Health (IDLH) Concentration for hydrogen sulfide as 100 ppm.

As of the date of this MSDS, the Occupational Safety and Health Administration (OSHA) is still using the 1988 IDLH of 300 ppm for enforcement of workplace safety violation. Check with your local OSHA agency for the current status of this issue.

SIGNS AND SYMPTOMS OF EXPOSURE:

Symptoms of asphyxiation may include rapid breathing, incoordination, rapid fatigue, excessive salivation, disorientation, headache, nausea, and vomiting. Convulsions, loss of conciousness, coma, and/or death may occur if exposure to high concentrations continues.

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4. FIRST AID MEASURES

EYE:
No specific first aid measures are required because this material is not expected to cause eye irritation. As a precaution remove contact lenses, if worn, and flush eyes with water.
SKIN:
No specific first aid measures are required because this material is not

expected to be harmful if it contacts the skin. As a precaution, remove clothing and shoes if contaminated. Wash skin with soap and water. Wash or clean contaminated clothing and shoes before reuse.

INGESTION:

No specific first aid measures are required because this material is a gas and cannot usually be swallowed.

INHALATION:

If exposure to hydrogen sulfide (H2S) gas is possible during emergencies, wear a NIOSH/MSHA approved positive pressure air-supplying respirator. Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

5. FIRE FIGHTING MEASURES

SPECIAL NOTES: In case of fire, do not extinguish. Stop flow of fuel and allow fire to burn out.

FIRE CLASSIFICATION:

Classification (29 CFR 1910.1200): Flammable gas.

FLAMMABLE PROPERTIES:

FLASH POINT: Gas (NFPA)
AUTOIGNITION: 1000F (537C)
FLAMMABILITY LIMITS (% by volume in air): Lower: 1.5 Upper: 75
Est. based on components
EXTINGUISHING MEDIA:
Water fog, fine spray, carbon dioxide, dry chemical.
See Fire Fighting Instructions below.

NFPA RATINGS: Health 3; Flammability 4; Reactivity 0.

FIRE FIGHTING INSTRUCTIONS:

Do not extinguish. Stop flow of fuel and allow fire to burn out. If flames are accidentally extinguished, explosive reignition may occur. Eliminate ignition sources. For unignited vapor cloud, use water spray to knock down and control dispersion of vapors.

Once fuel has stopped, small fires may be extinguished. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out and danger of reignition has passed.

For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained

breathing apparatus. See section 7 for proper handling and storage.

COMBUSTION PRODUCTS:

Normal combustion forms carbon dioxide and water vapor; incomplete combustion can produce carbon monoxide.

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6. ACCIDENTAL RELEASE MEASURES

CHEMTREC EMERGENCY NUMBER (24 hr): (800)424-9300 or (703)527-3887

International Collect Calls Accepted

ACCIDENTAL RELEASE MEASURES:

Stop the source of the leak or release. Eliminate all sources of ignition

in vicinity of released gas.

If this material is released into a work area, evacuate the area immediately. Persons entering the contaminated area to correct the problem or to determine whether it is safe to resume normal activities must comply with all instructions in the Exposure Controls/Personal Protection section.

Allow to dissipate with adequate ventilation.

7. HANDLING AND STORAGE

This material presents a fire hazard. Gas can catch fire and burn with explosive force. Invisible gas spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Petroleum gases are heavier than air and may travel along the ground or into drains to possible distant ignition sources that may cause an explosive flashback.

Do not use or store near heat, sparks, or open flames. Use or store only in a well-ventilated area. Keep container closed when material is not in use.

Do not breathe gas. When working with this material, the minimal oxygen content should be 19.5 percent by volume under normal atmospheric pressure. Before entry into confined spaces that may have contained hazardous material, determine concentrations and take appropriate measures for personal protection. Material presents a hazard that may require personal protective equipment for entry.

For bonding and grounding information, refer to American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity."

Auto-refrigeration: Drains can become plugged and valves may become inoperable because of the formation of ice due to expanding vapors or vaporizing liquids. Drains and valves may be thawed by applying an environmentally acceptable low freezing liquid to the outside surfaces.

Liquid should be recovered for reuse or proper disposal.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the

personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS

Use in a well-ventilated area. Use explosion-proof ventilation equipment.

Use process enclosures, local exhaust ventilation, or other engineering controls to control H2S levels below the OSHA Permissible Exposure Limit (PEL) of 10 ppm. For more information on H2S, see Chevron MSDS No. 301.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION:

No eye protection is normally required.

SKIN PROTECTION:

No protective clothing is normally required. Wear protective clothing if engineering controls or work practices are not adequate to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: <Nitrile> <Viton>

RESPIRATORY PROTECTION:

Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain a minimal oxygen content of 19.5% by volume under normal atmospheric pressure.

Determine if airborne concentrations are below recommended exposure limits for H2S. If not, wear a NIOSH approved air-supplying respirator.

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9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION:

Colorless gas.

pH:	NA
VAPOR PRESSURE:	NA
VAPOR DENSITY (AIR=1):	H2S = 1.2 (NFPA 325M)
BOILING POINT:	NA
FREEZING POINT:	NA
MELTING POINT:	NA

SOLUBILITY: Soluble in liquid hydrocarbons.
SPECIFIC GRAVITY: NA
DENSITY: NA

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10. STABILITY AND REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS:
NDA.
CHEMICAL STABILITY:
Stable.

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CONDITIONS TO AVOID:
Avoid high temperatures. Avoid contact with heat, sparks, fire, and oxidizing agents
INCOMPATIBILITY WITH OTHER MATERIALS:
May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc. Forms explosive materials with oxygen or air. May react violently or explosively with halogens.
HAZARDOUS POLYMERIZATION:
Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS:
The eye irritation hazard is based on an evaluation of the data for the components.
SKIN EFFECTS:
The skin irritation hazard is based on an evaluation of the data for the components.
ACUTE ORAL EFFECTS:
The acute oral toxicity is based on an evaluation of the data for the components.
ACUTE INHALATION EFFECTS:
The acute respiratory toxicity is based on an evaluation of the data for the components.

12. ECOLOGICAL INFORMATION

ECOTOXICITY:
No data available.
ENVIRONMENTAL FATE:
No data available.

13. DISPOSAL CONSIDERATIONS

Allow to dissipate with adequate ventilation.

14. TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT SHIPPING NAME: NATURAL GAS, COMPRESSED
DOT HAZARD CLASS: 2.1 (FLAMMABLE GAS)
DOT IDENTIFICATION NUMBER: UN1971
DOT PACKING GROUP: N/A

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LABEL/PLACARD: FLAMMABLE GAS/FLAMMABLE GAS
TDG SHIPPING NAME: NATURAL GAS COMPRESSED
TDG HAZARD CLASS: 2.1
TDG IDENTIFICATION NUMBER: UN1971
TDG PACKING GROUP: N/A

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15. REGULATORY INFORMATION

SARA 311 CATEGORIES:
1. Immediate (Acute) Health Effects: YES
2. Delayed (Chronic) Health Effects: NO
3. Fire Hazard: YES
4. Sudden Release of Pressure Hazard: YES
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01=SARA 313	11=NJ RTK	22=TSCA Sect 5(a)(2)
02=MASS RTK	12=CERCLA 302.4	23=TSCA Sect 6
03=NTP Carcinogen	13=MN RTK	24=TSCA Sect 12(b)
04=CA Prop 65-Carcin	14=ACGIH TWA	25=TSCA Sect 8(a)
05=CA Prop 65-Repro Tox	15=ACGIH STEL	26=TSCA Sect 8(d)
06=IARC Group 1	16=ACGIH Calc TLV	27=TSCA Sect 4(a)
07=IARC Group 2A	17=OSHA PEL	28=Canadian WHMIS
08=IARC Group 2B	18=DOT Marine Pollutant	29=OSHA CEILING
09=SARA 302/304	19=Chevron TWA	30=Chevron STEL
10=PA RTK	20=EPA Carcinogen	

The following components of this material are found on the regulatory lists indicated.

N-BUTANE
is found on lists: 02,10,11,13,14,28,
1-PROPENE
is found on lists: 01,02,10,11,13,14,
HYDROGEN
is found on lists: 02,10,11,13,14,
BUTENE
is found on lists: 10,11,
METHANE
is found on lists: 02,10,11,13,14,
ETHANE

is found on lists: 02,10,11,13,14,

ETHENE

is found on lists: 01,02,10,11,13,14,

PROPANE

is found on lists: 02,10,11,13,14,17,

HYDROGEN SULFIDE

is found on lists: 01,02,09,10,11,12,13,14,15,17,28,29,

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16. OTHER INFORMATION

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NFPA RATINGS: Health 3; Flammability 4; Reactivity 0;
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT:
This revision updates Sections 14 (TRANSPORT INFORMATION - DOT).

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	TPQ - Threshold Planning Quantity
RQ - Reportable Quantity	PEL - Permissible Exposure Limit
C - Ceiling Limit	CAS - Chemical Abstract Service Number
A1-5 - Appendix A Categories	() - Change Has Been Proposed
NDA - No Data Available	NA - Not Applicable

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Toxicology and Health Risk Assessment Unit, CRTC, P.O. Box 1627, Richmond, CA 94804

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The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modification of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

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